(FILE 'HOME' ENTERED AT 10:06:20 ON 19 SEP 2002)

	FILE 'CAPLUS' ENTERED AT 10:06:31 ON 19 SEP 2002
L1	4092 S SUPERPARAMAGNETIC OR SUPER-PARAMAGNETIC OR SUPERMAGNETIC OR S
L2	20473 S MAGNETIC (A) RECORDING
L3	75 S L1 AND L2
L4	10547 S UNDERLAYER OR (SOFT (A) MAGNETIC)
L5	4 S L3 AND L4
L6	1284 S SEEDLAYER OR SEED-LAYER OR (SEED (A) LAYER)
L7	0 S L3 AND L6
L8	4092 S SUPERPARAMAGNETIC OR SUPER-PARAMAGNETIC OR SUPERMAGNETIC OR S
L9	20473 S MAGNETIC (A) RECORDING
L10	10547 S UNDERLAYER OR (SOFT (A) MAGNETIC)
L11	1284 S SEEDLAYER OR SEED-LAYER OR (SEED (A) LAYER)
L12	4 S L8 AND L9 AND (L10 OR L11)
	FILE 'METADEX' ENTERED AT 10:11:56 ON 19 SEP 2002
L13	666 S SUPERPARAMAGNETIC OR SUPER-PARAMAGNETIC OR SUPERMAGNETIC OR S
L14	568 S MAGNETIC (A) RECORDING
L15	2141 S UNDERLAYER OR (SOFT (A) MAGNETIC)
L16	109 S SEEDLAYER OR SEED-LAYER OR (SEED (A) LAYER)
L17	0 S L13 AND L14 AND (L15 OR L16)
L18	1 S L13 AND L14

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ANSWER 1 OF 4 CAPLUS COPYRIGHT 2002 ACS
L5
AN
     2002:591017 CAPLUS
     Review Modern magnetic materials in data storage
ΤI
ΑU
     Comstock, R. L.
     Department of Chemical and Materials Engineering, San Jose State
CS
     University, One Washington Square, San Jose, CA, 95192, USA
     Journal of Materials Science: Materials in Electronics (2002), 13(9),
SO
     CODEN: JSMEEV; ISSN: 0957-4522
     Kluwer Academic Publishers
PΒ
DT
     Journal
     English
LA
CC
     76 (Electric Phenomena)
     The current status of the technol. of magnetic recording
AB
     as used in disk drives is reviewed. The emphasis is on the magnetic
     materials used in the application and on some of the tech. problems that
     may limit the increase in areal d. The new technol. of magnetic random
     access memory (MRAM), which has evolved from the magnetic
     recording application, is also reviewed. A wide range of magnetic
     materials is essential for the advance of magnetic
     recording and the MRAM technol. For the magnetic-
     recording application the requirements are for high-magnetization,
     soft magnetic materials for write heads, new
     antiferromagnetic alloys with high blocking temps., large coupling to
     ferromagnetic films and low susceptibility to corrosion for pinning films
     in giant magnetoresistive sensors, and for the MRAM application, the
     requirement is for new ferromagnetic alloys with large values of tunneling
     polarization ratio. A significant limitation to magnetic
     recording is found to be the inconsistent demands on media
     thickness: small media thicknesses are required for large values of
     signal-to-noise ratio, while large values of thickness are required to
     reduce the impact of the superparamagnetic effect, which results
     in the potential for data loss over time. Both of these requirements are
     discussed. Multilayer ferromagnetic films for recording surfaces are
     shown to allow both large signal-to-noise ratio and adequate resistance to
     data loss.
     ANSWER 2 OF 4 CAPLUS COPYRIGHT 2002 ACS
L5
     2002:153089 CAPLUS
AN
     136:193132
DN
ΤI
     Perpendicular magnetic recording medium and
     perpendicular magnetic recording/reproduction
     apparatus
     Ogiwara, Hideo; Hikosaka, Kazushi; Oikawa, Soichi; Sakai, Hiroshi;
IN
     Shimizu, Kenji
     Toshiba Corp., Japan; Showa Denko K. K.
PΑ
     Jpn. Kokai Tokkyo Koho, 7 pp.
SO
     CODEN: JKXXAF
DТ
     Patent
     Japanese
LA
IC
     ICM G11B005-738
     ICS G11B005-65; G11B005-667; H01F010-08
     77-8 (Magnetic Phenomena)
CC
FAN.CNT 1
     PATENT NO.
                     KIND DATE
                                           APPLICATION NO. DATE
     JP 2002063714
                      A2
                          20020228
                                           JP 2000-249727
                                                            20000821
     US 2002039669
                      A1
                                           US 2001 902688
                            20020404
                                                           > 20010712
PRAI JP 2000-249727
                     Α
                            20000821
     A high-d. and low-noise magnetic recording medium
     comprises a non-magnetic substrate having an underlayer film of
     a superparamagnetic film, and a perpendicular magnetic layer on
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the underlayer film. A perpendicular magnetic

recording/reprodn. app. having the above medium is also described. stmagnetic recording medium superparamagnetic underlayer film ITMagnetic films (superparamagnetic films; superparamagnetic underlayer of perpendicular magnetic recording medium and perpendicular magnetic recording/reprodn. app.) Magnetic memory devices IT(superparamagnetic underlayer of perpendicular magnetic recording medium and perpendicular magnetic recording/reprodn. app.) IT 74750-97-3D, oxidized 149344-82-1 RL: DEV (Device component use); USES (Uses) (superparamagnetic underlayer of perpendicular magnetic recording medium and perpendicular magnetic recording/reprodn. app.) ANSWER 3 OF 4 CAPLUS COPYRIGHT 2002 ACS L5 AN2001:736459 CAPLUS DN136:62646 Perpendicular recording: the promise and the problems ΤI Wood, R.; Sonobe, Y.; Jin, Z.; Wilson, B. ΑU CS IBM Storage Technology Division, CUY/0282, San Jose, CA, 95193, USA SO Journal of Magnetism and Magnetic Materials ((2001), 235(1-3), 1-9 CODEN: JMMMDC; ISSN: 0304-8853 PΒ Elsevier Science B.V. Journal; General Review DT LA English CC 77-0 (Magnetic Phenomena) A review. Perpendicular recording has long been advocated as a means of AΒ achieving the highest areal densities. In particular, in the context of the 'superparamagnetic limit', perpendicular recording with a soft underlayer promises several key advantages. These advantages include a higher coercivity, thicker media that should permit smaller diam. grains and higher signal-to-noise ratio. Also, the sharper edge-writing will facilitate recording at very high track densities (lower bit aspect ratio). Recent demonstrations of the technol. showed densities comparable with the highest densities reported for longitudinal recording. This paper further examines the promise that perpendicular recording will deliver an increase in areal d. two to eight times higher than that achievable with longitudinal recording. There are a no. of outstanding issues but the key challenge is to create a low-noise medium with a coercivity that is high and is much larger than the remanent magnetization. review perpendicular magnetic recording ST IT Magnetic recording (perpendicular magnetic recording) THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD RE.CNT 15 RE (1) Anon; http://www.readrite.com/html/whatnew/101600a.html 2000 (2) Bertram, H; IEEE Trans Magn 2000, VMAG-36(1), P4 (3) Fullerton, E; Paper #25pA-01 2000 (4) Greaves, S; Paper #26pA-10 2000 (5) Jin, Z; IEEE Trans Magn to be submitted 2001 (6) Jin, Z; National Storage Industry Consortium Winter Meeting 2000 (7) Okamoto, Y; Paper #26aA-05 2000 (8) Ouchi, K; IEEE Trans Magn 2000, V36, P16 CAPLUS (9) Potter, R; IEEE Trans Magn 1974, VMAG-10(3), P502 (10) Ruigrok, J; Short-Wavelength Magnetic Recording: New Methods and Analyses 1990 (11) Sonobe, Y; Paper #26pA-11 2000 (12) Takano, H; IEEE Inter-mag Conference 2000

(13) Victora, R; National Storage Industry Consortium Winter Meeting 2000

- (14) Wood, R; IEEE Trans Magn 2000, VMAG-36(1), P36 (15) Wood, R; JMMM 1999, V193, P207 CAPLUS

- L18 ANSWER 1 OF 1 METADEX COPYRIGHT 2002 CSA
- AN 2001(10):33-958 METADEX
- TI Ambient gas effects on iron oxide particle aggregated films prepared by laser ablation.
- AU Zbroniec, L. (National Institute for Materials and Chemical Research); Sasaki, T. (National Institute for Materials and Chemical Research); Koshizaki, N. (National Institute for Materials and Chemical Research)
- SO Scripta Materialia (2001) 44, (8-9), 1869-1872, Graphs, 6 ref. . USA Conference: 5th International Conference on Nanostructured Materials (NANO 2000)., Sendai, Japan, August 20-25, 2000 ISSN: 1359-6462
- DT Conference
- CY United States
- LA English